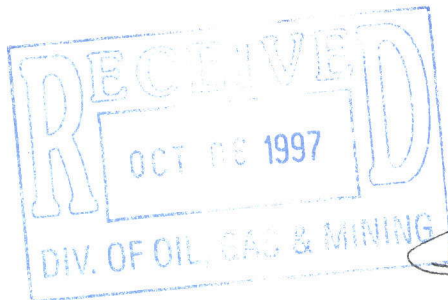


UT-055-3909



(For BLM use) Serial No. 474-075853
Date Received 10/1/97

NOTICE
OR
PLAN OF OPERATIONS

(For Operations Proposed Under the 43 CFR 3809 Regulations)

Instructions to Claimant/Operator: Circle "Notice" (above) if proposed mining activity within the project area will disturb a total of five (5) acres or less during the calendar year. Circle "Plan of Operations" if disturbance will exceed five (5) acres during the calendar year or if operations are within one of the specially designated areas described in 43 CFR 3809.1-4(b). Complete the form in as much detail as possible. Additional sheets may be used if necessary. Use maps or sketches where appropriate (maps or sketches are required for submitted plans of operations and are recommended for submitted notices). A review of the 43 CFR 3809 regulations should be conducted prior to completion of this form and submission to the appropriate BLM office.

Operator Information:

Name

Address

Telephone

J KIRK FREEMAN

830 E. 8080 S.

(801) 255-4318

SANDY, UT 84094

Claimant Information (If different than operator):

Name

Address

Telephone

J KIRK FREEMAN

830 E. 8080 S. SANDY, UT

(801) 255-4318

LAN C ENGLAND

Claim Information (Claim names, circle claim types (Lode, Placer, Mill Site, Tunnel), UMC Serial Number. List only the claims where the disturbance is proposed):

The Crystal Mine - 363474

The Crystal Millsite - 363473

Location of Proposed Activity (i.e. County, Township, Range, Section and Quarter section):

Sec 23

Twp 12 S

R 10 W

SLBM (Crystal Mine)

Lot 1 Sec 4

Twp 8 S

R 5 W

SLBM (Crystal Millsite)

Describe Pre-Existing Disturbances and Structures or Indicate on Maps or Sketches (Mine and Mill Facilities, Workings, Tailings, Dump Areas, etc...). It may be to your advantage to document existing disturbance with photographs):

A pre-existing jeep trail exists at the Crystal Mine site. (See attached map)

Describe Access Routes (Existing and proposed, for proposed road construction specify length and width in feet):

(See attached Operation & Reclamation Plan

for the Crystal Mine & Millsite)

proposed for disturbance (1 AC. = 43,560 sq. ft.). No explosives will be used for extraction. A rubber-tired backhoe (John Deere 310 E or equivalent) or a track hoe (Kubota 750 series or equivalent) equipped with a breaker bit will be used to extract materials. See attached ~~note~~^{PLAN} for others.

Oct 11, 1947.

Unknown

See Attached PLAN for the Crystal Mine.

J. Kent Fleen
Signature of Claimant or Operator

Sept 25, 1997

1. A notice submitted in relation to the 43 CFR 3809 regulations does not require approval from the BLM. However, notification of such activities shall be made at least 15 days before commencing operations. Approval of a submitted plan of operations is required from the BLM prior to commencing operations. The BLM will promptly acknowledge receipt of a plan and will notify the claimant/operator of the status of the plan within 30 days of receipt.
2. Approval of a plan of operations does not constitute certification of ownership to any person named as claimant/operator herein, nor does approval constitute recognition of the validity of any mining claims named herein.
3. Information and data submitted and specifically identified by the operator as containing trade secrets or confidential or privileged commercial or financial information should be attached to a separate page and cited in the text of the notice or plan of operations. This information will be filed separately by the BLM and will not be available for public inspection.
4. Failure of an operator to file a notice under 3809.1 - 3 or a plan of operations under 3809.1 - 4 will be subject to the operator, at the discretion of the authorized officer, to being served a notice of non-compliance or enjoined from the continuation of such operations.

The Crystal Mine and Millsite

BLM Recordation Numbers 363473 and 363474

Operator: J. Kirk Freeman
830 E. 8080 S.
Sandy, UT 84094

Claimants: J. Kirk Freeman
830 E. 8080 S.
Sandy, UT 84094

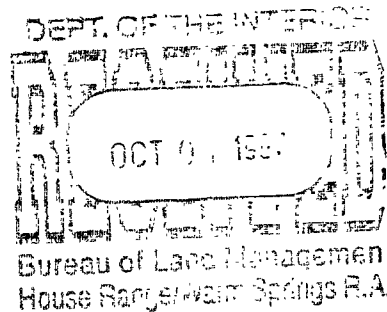
AND

Lan C. England
2157 S. Lincoln St,
Salt Lake City, UT 84106

I will complete all necessary reclamation of areas disturbed during the course of my operations to the standards described in 43 CFR 3809.1-3(d) and that reasonable measures will be taken to prevent unnecessary or undue degradation of federal lands during operations.

J. Kirk Freeman
Sept 25, 1997

J. Kirk Freeman



Operation and Reclamation Plan for the Crystal Mine

Proposed Operations

The Crystal Mine is a deposit of zeolitized volcanic ash (tuff) lies that possesses no significant overburden. An experimental sample of approximately 500 tons is proposed to be removed in autumn of 1997, and used for processing and testing. The zeolite material (clinoptilolite) has minor inclusions of other volcanic rocks and materials.

A mining claim has been filed with Juab County for a placer deposit located in **Section 23 of Township 12 South, Range 10 West** in the Keg Mountains of Juab County, Utah .

Notification and claim of the deposit has been made to the Bureau of Land Management, and a Notice of Intent to Commence Small Mining Operations to the Utah Department of Oil and Gas is being submitted in August, 1997. **Extraction** operations are **intended to begin in mid-October, 1997** and the completion of the **initial phase** will be **complete by December, 1997**. Processing, analysis, and product development will take place during winter of 1997-1998, and further extraction activities will be dependent on the results of the experimental work.

The **extraction** of the volcanic materials will be done by **backhoe or excavator** equipped with breaker point. Slushing and **loading** will be accomplished by use of **front end loader** and the material transported for process by truck.

The construction of **230 feet of new road at the mine** approximately **ten feet wide** will be undertaken from the terminus of a jeep trail that runs approximately north and south to the west of Section 23. A construction/loading **pad** will be constructed at the base of the extraction area for materials segregation and loading. The area of this pad, dimensions **80 feet by 80 feet**, will total 6,400 square feet.

The **extraction operations** will proceed in a south-southeast direction for a total **length of 270 feet and width of thirty feet**. The amount of material extracted during the initial phase is expected to be less than 600 tons, and the **mining operations** will represent a total surface disturbance of less than a half of an acre (16,800 square feet, including roads, pad, and extraction operations).

The area of the Keg Mountains is extremely arid, and no perennial water courses exist in the proposed mining area. A spring identified on topographic maps of Section 23 is entirely enclosed (piped), and exhibits no discernible flow or reservoir. No mining activities will take place within 100 feet of the spring.

A **millsite** in support of the Crystal Mine extraction operations will be **located near Faust, Utah** in Lot 1 of Section 4, 8 South, 5 West, SLBM. Processing of materials (crushing, sieving, and packaging) will occur at the millsite, and materials extracted during 1997 will be removed from the site as processed. Processing of materials for the initial phase will be done by skid- or trailer-mounted processing equipment . The only construction or facilities at the millsite will be earthworks contoured to facilitate storage and segregation of materials, and shed-type enclosures.

Reclamation Plan

The Crystal Mine will be a **surface** mining activity, designed to extract zeolitized volcanic ash (tuff) from a deposit that exists as a deep drift entirely above the 5710 foot elevation level. No overburden exists overlying the ash deposit; a thin (4-10 inches) layer of topsoil overlies the lower areas of proposed road and pad construction.

The **construction of roads and pad** will be accomplished by front end loader or backhoe performing cut-and-fill leveling of operational areas. **Selective clearing** will take place to minimize the destruction of existing vegetation (trees and grasses). **Topsoil materials will be removed to a depth of six inches** from road and pad areas and **stockpiled for reclamation** and reseeded. This stockpile will be sited at an intermediate elevation on the site (to reduce wind and surface flow erosion) and seeded at a rate of 20 pounds per acre of a drought-resistant rangeland grass mixture in fall of 1997 to reduce wind erosion of the stockpile. **No overburden materials will be removed or stockpiled from the extraction area, due to the lack of overburden or topsoil materials on the deposit.**

An **interim reclamation** will be performed at the end of the initial extraction operations to **eliminate the need for heavy equipment** during final reclamation. **Re-contouring** of the extraction area of the ash deposit will eliminate slopes greater than 2:1 (v:h) and will reduce remaining highwalls to less than ten feet in height. Extraction operations will be performed to facilitate the interim reclamation (i.e. the removal depth of native zeolitized materials will be less than eight feet in drift). **The working face of the extraction operation will not be covered with topsoil or re-seeded**, but will be **recontoured** to similar topography of the deposit (a series of ledges and ascending slopes) **before the initial extraction operation heavy equipment is demobilized.**

Final reclamation activities at the Crystal Mine (re-distribution of topsoil, and re-seeding) will take place in September of 1998 in the event that no further extraction activities are anticipated, or **after mining activities are finished** at a date that is not determined. **The replacement of topsoil materials** will be performed by Bobcat loader **to a depth of six inches** on proposed road and pad areas. **Re-seeding** will be performed by applying the seed mixture to the surface of the soil at the prescribed rate of twenty pounds per acre, and working the seed into the topsoil materials by hand raking to a depth of 1-2 inches.

Roads totalling 180 feet by 10 feet wide will be constructed **at the millsite**, as well as a **storage and processing earthwork with windbreak**, 120 feet by 200 feet. No permanent facilities will be constructed at the Crystal Millsite under this notification. The top 12 inches of **topsoil material** will be **stockpiled and reserved** from initial site preparation activities. **Total surface disturbance at the millsite** will total 25,800 square feet.

Upon cessation of processing activities the millsite will be reclaimed by **recontouring affected areas of the millsite to pre-disturbance contours and redistributing stockpiled topsoil** materials 6 to 12 inches deep. The disturbed areas **will be revegetated** by application of a

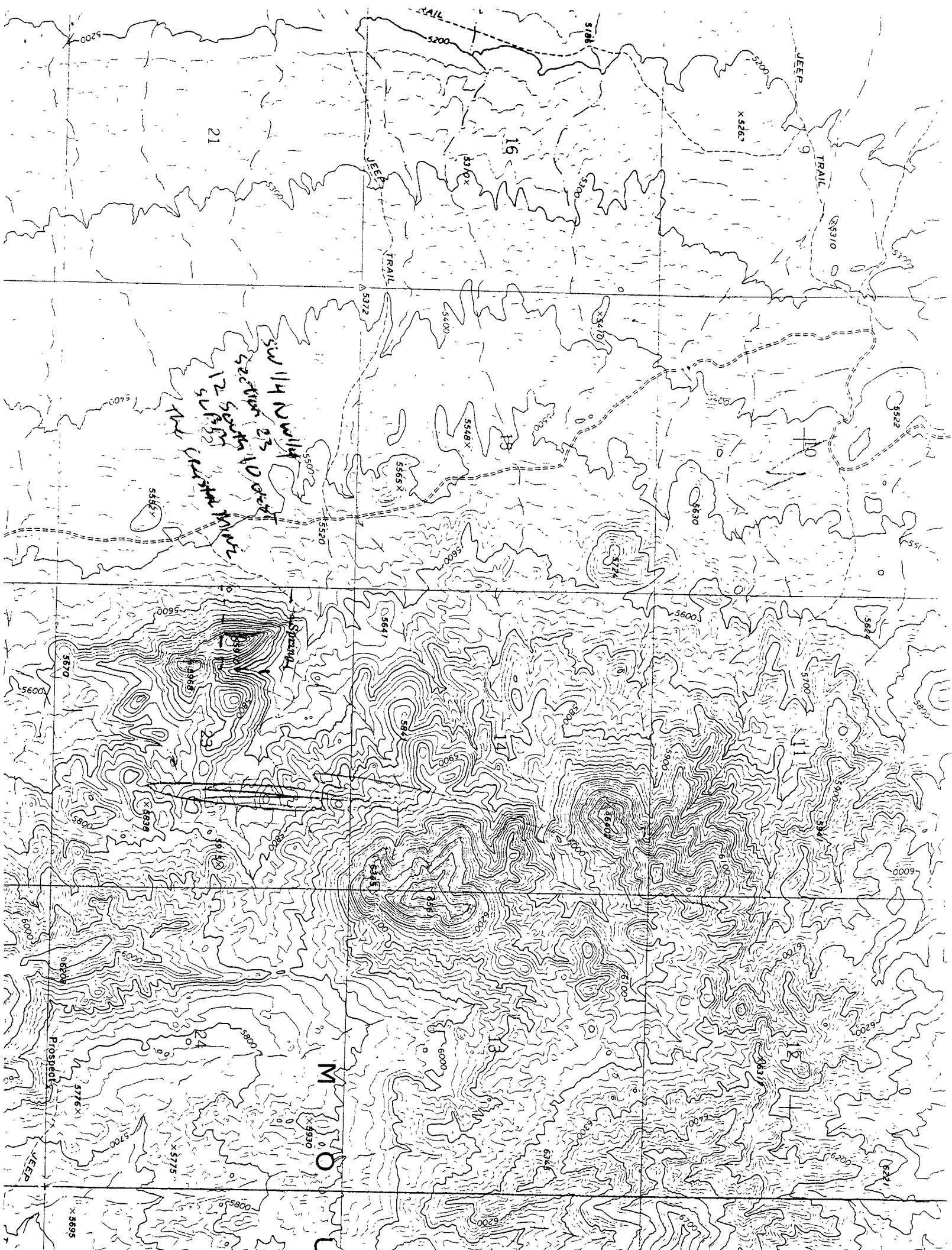
native grass seed mix and fertilizer.

Total area of disturbance for the Crystal Mine and the associated millsite will total 39,600 square feet. The visual and topographic effects of the project are expected to be very minor, with a total disturbed area of less than 1 acre.

A native grass seed mixture is suggested on a separate page.

Proposed Rangeland Seed Mixture

Sitanion hystrix	Squirreltail	20%
Oryzopsis hymenoides	Indian ricegrass	20%
Agropyron spicatum	Bluebunch wheatgrass	30%
Mililotus officianalis	Yellow sweetclover	10%
Atrilex cansans	Fourwing saltbush	20%



THE CRYSTAL MINE

